

Work Order ID 68574

Monday, April 18, 2011 11:33:40 AM



Page 1

Item ID: D105-674-011G

Accept



Setup Start



Revision ID:

Item Name: Skidtube, Grey

Stop



Start Date: 4/18/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/21/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D2966

Rev A2

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPP D105-674-011G

CHG002

S. Wesley

John CL 11-7-14

120

0.00



BENDING MACHINE - SKIDTUBES

CNC Bend I

Memo

0.00

CNC Delta 100 Bender

Bend tube as per program BO105 on CNC Bender and Dwg D2966 as per folio 1, use DT9631 bending aide

DP

11-6-8

68574

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

0.00



Skidtubes

Skidtubes

Memo

0.00

- 1-Cut Fwd end of the tube using DT8185-1
- 2-Cut Aft end at 107.06" using DT8185D
- 3-Deburr ends
- 4-Drill Aft Cap holes using DT8678
- 5-Locate DT8679 with 1/8 clecos in Aft Cap holes. Ensure DT8679 is centered on Fwd end of tube and drill #40 Fwd bushing.
- 6-Clamp DT8679 to the tube. Drill all #30 wearplate and crossbolt holes.
- 7-Open Aft Cap holes using #6 drill
- 8-Open wearplate holes and two side holes to Ø19/64" (0.297") as per Dwg D2966-1.
- 9-Deburr holes.
- 10-Open remaining (16) crossbolt holes to Ø0.500

140

0.00



Skidtubes

Skidtubes

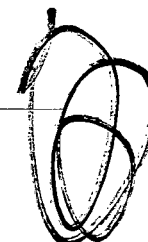
Memo

0.00

- 1-Weld Fwd Cap as per Dwg D2966 and QSI 004. Fill #40 Fwd cleco hole.
- 2-Grind Fwd Cap welds flush

BE 11/06/15

BE 11/06/15



Dart Aerospace Ltd

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Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

S. W. C. 12/10/10

160

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

S. W. C. 12/10/10

170

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

11.26.21

W/O:		WORK ORDER CHANGES					
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Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

1 0 BE 4/06/21

190

Skidtubes

0.00



Skidtubes

Memo

0.00

Skidtubes

1-Open crossbolt holes to finish size as per Dwg D2966
2-Open 14 holes to Ø0.750" & 2 holes to Ø0.875", countersink crossbolt holes &
remove alodine to prepare for welding as per Dwg D2966
3-Deburr holes inside & outside, blow out chips

1 0 B 11/06/23

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	Skidtubes	0.00							
	Skidtubes					1			BE 4/06/23
Skidtubes	<p>Memo</p> <p>1-Bond Web in place per QSI 015. (Ensure holes line up)</p> <p>Pick:</p> <p>A/R Sikaflex-291 batch: 116945 □□</p> <p>Sikaflex expiry date: 12/31/15</p> <p>start time: 12:30 4/18/11</p> <p>end time: 4:30 4/06/28</p> <p>2-Weld Crossbolt Spacers as per Dwg D2966 and QSI 004. For crossbolt spacer, weld one side, pass 5/8" drill; weld other side, pass 5/8" drill.</p> <p>Pick:</p> <p>A/R □ Aluminum Rod batch: 1112860 BE 11/06/28</p> <p>3-Pass Ø0.630" drill to remove spillover for D2973 crossbolt. Pass Ø0.750" drill to remove spillover for D2971 crossbolt. BE 11/06/28</p> <p>4-Grind welds flush as per Dwg D2966 BE 11/06/28</p>	0.00							
210	QC10- Inspect visual per QSI004- ground welds	0.00							
	QC								
Quality Control	<p>Memo</p> <p>BE 11/06/28</p>	0.00							

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

220

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Sulda/30

230

Grey Sandtex(Ref:4.3.5.6) per QSI005 4.3

0.00



Powdercoat

Powder Coating

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

0.00

240

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

11:30
320 °F
12:00

P.T.O.

H.D. M/L 11/07/06

1.6 BL 11-7-13.

W/O: 68574		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
11-7-4	-	ADD <u>STEP</u> FOR RE-ALIGNED PERMANENT CHANGE.	<i>[Signature]</i>	11-7-6	1	N/A	<i>[Signature]</i> WTH

Part No: D105-674-011G PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250  HandFinish Hand Finishing	HandFinishing Memo 1-Inspect for foreign objects as per QSI 024 2-Install Inserts, Wearplate and Cap per Dwg D2966. Insert a drop of sikaflex at insert holes before installing wearplates. Seal Aft Cap using Sikaflex. Install bushing and nut. By looking Fwd, install nut to right hand side. Pick: Qty <input type="checkbox"/> Part Number <input type="checkbox"/> Description <input type="checkbox"/> Batch A/R <input type="checkbox"/> Sikaflex-291 <input checked="" type="checkbox"/> 116040 <input type="checkbox"/> Sikaflex expiry date: <input type="checkbox"/> 11-08. 3-Wing Walk as per Dwg D2966 and QSI 005 4.4 <input type="checkbox"/> Batch: 117863.	0.00 0.00				1		BR 11-7-13.	
260  QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00				1		phi 11/07/13	

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270 	QC5- Inspect part completeness to step on W/O	0.00							
QC Quality Control	Memo *****ENSURE INSERT ARE AT LOCATION (6) AS PER DWG D2966*****	0.00							
280 	Pick Kit	0.00							
Packaging Packaging	Memo	0.00							
290 	QC4- 100% Inspect kits for completeness	0.00							
QC Quality Control	Memo	0.00							

Dart Aerospace Ltd

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Reference:

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
300	Packaging	0.00							
	Packaging								
Packaging	Memo	0.00							
	Identify and pack for shipping as per PPP D105-674-011G								
	Location: <u>87</u>								
310	QC21- Final Inspection - Work Order Release	0.00							
	QC								
Quality Control	Memo	0.00							

Rout

Rout/150

11/7/18

mf 11-07-15

W/O:		WORK ORDER CHANGES					
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Picklist Print

Monday, April 18, 2011 11:33:47 AM

Page 1

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Parent Item: D105-674-011G

Parent Item Name: Skidtube, Grey



Start Date: 4/18/2011

Required Date: 4/21/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A 04.07.07 New Issue KJ/JLM
seq110 DD verf:EC

IPP Rev:B 10.06.09 remove

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2962-125 Outer Tube Extrusion		Manufactured	No			120	Each	26.0000	1	1			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				HALL		26							
				17532		26							
D2964 Cap		Manufactured	No			140	Each	25.0000	1	1			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG002		25							
				14101		10							
				64654		15							
D2976 BO 105 Skidtube I Beam		Manufactured	No			200	Each	0.0000	1	1			
D2971 Cross Bolt Spacer		Manufactured	No			200	Each	20.0000	1	1			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				LG001		20							
				44445		20							

② DP 11-6-8

BE 11/06/15

B 11/06/23

BE 11/06/28

70078

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Start Qty: 1.00

Required Qty: 1.00

D2973

Manufactured No

200 Each

145.0000 7 7



Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG002

145

14636

145

D2965

Manufactured No

250 Each

31.0000 1 1



Cap, 105 Skidtube

Location

Loc Qty

Loc Code

FP006

31

52057

31

D2970-1

Manufactured No

250 Each

22.0000 1 1



Wearplate

Location

Loc Qty

Loc Code

FP016

22

43726

3

48213

19

D2970-3

Manufactured No

250 Each

12.0000 1 1



Wearplate

Location

Loc Qty

Loc Code

FP020

12

48214

12

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Start Date: 4/18/2011

Required Date: 4/21/2011

Start Qty: 1.00

Required Qty: 1.00

D3176-1 Manufactured No

250 Each

17.0000

1

1



Bushing



BR 11-7-13

Location

Loc Qty

Loc Code

ST039

17

35627 ✓

2

37586

15

1

D3176-3 Manufactured No

250 Each

20.0000

1

1



Nut



BR 11-7-B

Location

Loc Qty

Loc Code

ST039

20

37585 ✓

2

44896

18

1

ALS7-1032-130 Purchased No

250 Each

543.0000

36

36



Insert



BR 11-7-B

ALS4-1032-130

Location

Loc Qty

Loc Code

ST281

200

117331

200

ST282

343

116800

343

36

MS27039-1-08 Purchased No

250 Each

1,090.000

26

26



Screw



BR 11-7-B

Location

Loc Qty

Loc Code

FP-A

151

110835

151

ST291

939

115108 ✓

639

117423

300

26

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Shop Packet Print

Page 3

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Required Date: 4/21/2011

Start Qty: 1.00

Required Qty: 1.00

AN960JD10L NAS1149D0332J ☒ Purchased

No

250

Each

0.0000

28

28



Washer

117291

MS27039-1-09 ☒ Purchased

No

250

Each

469.0000

2

2



Screw

BL 11-7-13

Location

Loc Qty

Loc Code

FP-B

175

18057

175

ST291

294

111650

294

D2972

Manufactured

No

290

Each

93.0000

6



Bushing

Location

Loc Qty

Loc Code

ST028

93

33544

62

44160

31

D2974

Manufactured

No

290

Each

3.0000

1



Packer

Location

Loc Qty

Loc Code

ST028

3

42715

3

D2975

Manufactured

No

290

Each

3.0000

2



Wearshoe

Location

Loc Qty

Loc Code

ST497A

3

44894

3

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Shop Packet Print

Page 4

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Start Date: 4/18/2011

Required Date: 4/21/2011

Start Qty: 1.00

Required Qty: 1.00

AN4-51A Purchased No

290 Each

218.0000 3



Bolt

Location

Loc Qty

Loc Code

ST361

218

116003

68

117094

100

117313

50

AN960JD10L NAS1149D0332J Purchased No

290 Each

0.0000 8



Washer

MS21042L4 Purchased No

290 Each

2,474.000 3



Nut

Location

Loc Qty

Loc Code

ST300

2474

116188

474

116823

2000

MS27039-1-08 Purchased No

290 Each

1,090.000 8



Screw

Location

Loc Qty

Loc Code

FP-A

151

110835

151

ST291

939

115108

639

117423

300

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN RF	DRAWN BY RF	DART AEROSPACE USA, INC. BELLEVUE, WA	
CHECKED #	APPROVED #	DRAWING NO. D2966	REV. A SHEET 1 OF 2
DATE 00.03.08		TITLE BO 105 SKIDTUBE ASSEMBLY	SCALE NTS
A	00.03.08	NEW ISSUE	

RELEASED
00.05.11 #

Qty	Part Number	Description
X	D2966-041	SKIDTUBE ASSEMBLY
1	D2962-125	EXTRUSION
1	D2964	CAP
1	D2965	CAP
1	D2970-1	WEARPLATE
1	D2970-3	WEARPLATE
1	D2971	CROSS BOLT SPACER
7	D2973	CROSS BOLT SPACER
1	D2976	WEB
36	ALS7-1032-130 or ALS4-1032-130 or AKS7-1032-130 or AKS4-1032-130	INSERT
28	AN960JD10L	WASHER
26	MS27039-1-08	SCREW
2	MS27039-1-09	SCREW
1	D3176-1	BUSHING
1	D3176-3	NUT



021100d114

W/O: 68574

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) WELDING TO BE DONE PER DART QSI 004.
- 3) INSERT D2976 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- 4) USE DART DRILL TEMPLATE DT8451 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION B-B (34 PLACES) AFTER FINISH. SEAL WEARPLATE SCREWS WITH SIKAFLEX-241/-291.
- 5) DO NOT INSTALL MS27039-1-08 SCREWS AND AN960JD10L WASHERS IN THESE LOCATIONS.
- 6) INSTALL ALS7-1032-130 INSERT, MS27039-1-08 SCREW, AND AN960JD10L WASHER IN 2 PLACES THIS LOCATION BEFORE POWDER COATING.
- 7) FINISH:

ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2976 WEB
POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART
QSI 005 4.4 (OPTIONAL) BLACK SANDTEX (REF 4.3.5.7)



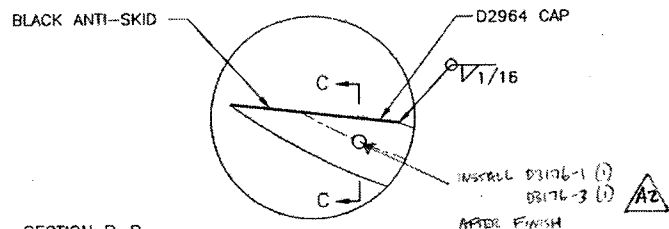
01.01.29
CP 01.01.30

A2	02.10.30	ADD D3176-1/-3	# CP
A1	01.01.29	CHANGE COLOR TO BLACK SANDTEX	# CP

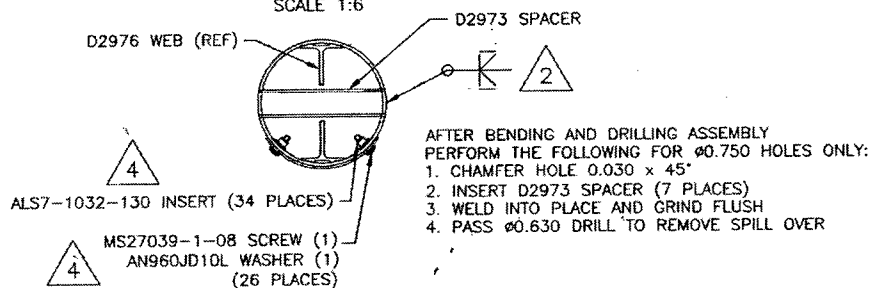
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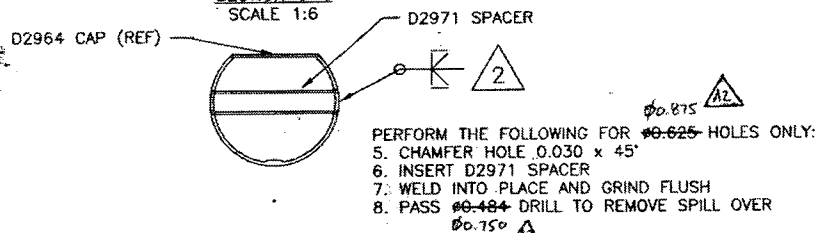
DETAIL A
SCALE 1:3



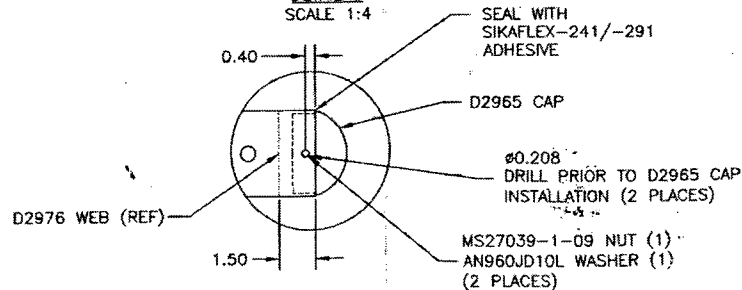
SECTION B-B
SCALE 1:6



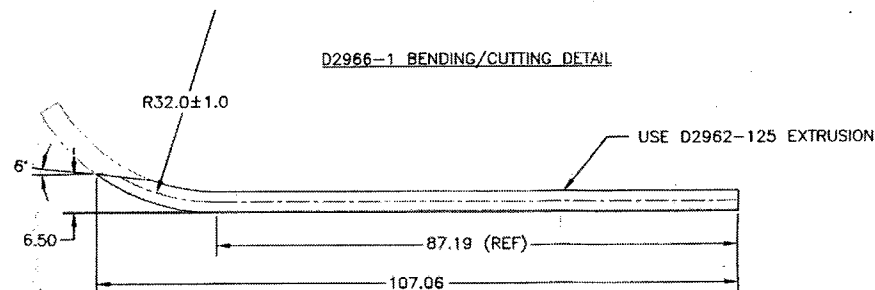
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SCALE 1:6



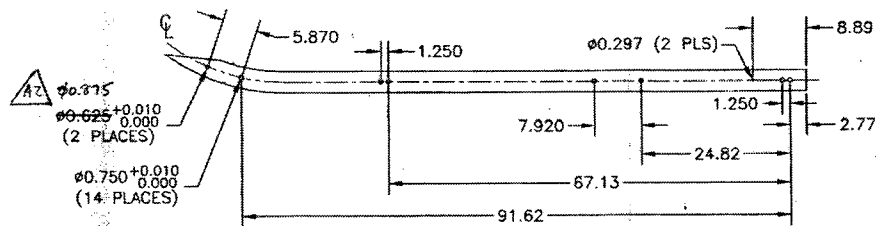
DETAIL D
SCALE 1:4



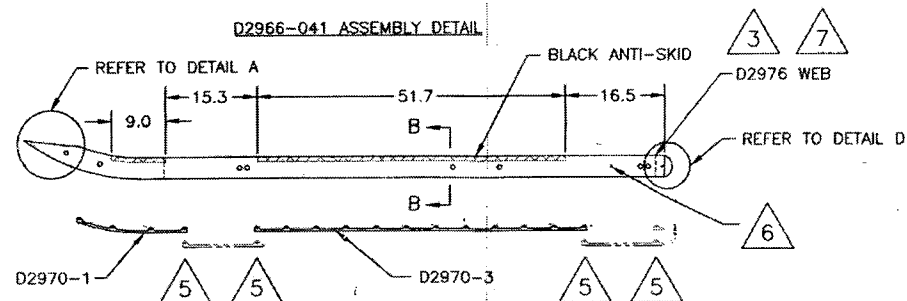
D2966-1 BENDING/CUTTING DETAIL



D2966-1 DRILLING DETAIL



D2966-041 ASSEMBLY DETAIL



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DESIGN RF	DRAWN BY RF	DART DART AEROSPACE USA, INC. BELLEVUE, WA	REV. A
CHECKED #	APPROVED #	DRAWING NO. D2966	SHEET 2 OF 2
DATE 00.03.08		TITLE BO 105 SKIDTUBE ASSEMBLY	SCALE 1:20

RELEASED
00-05-11

NO. 259

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: B68574
Part number: D105-674-0116
Description: 105
Welding Process: Tig[☒] Mig[]
Base material: Aluminum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Sal Dunn Date of Test Coupon 11-06-30

Welder Barclay Elliott Date of Test Coupon 11-06-30

The above named individual is qualified in accordance with AWS D17.1.2001 to weld